I. Amendments

A. In the Claims

This listing of claims will replace all prior versions and listings of claims in the application. Please amend claims 1 through 21 as follows:

Listing of the Claims

1. (currently amended) A dark color ambient temperature compensated color ~~sensor~~ sensing circuit, comprising:

a color sensor circuit configured to provide ~~produces~~ a light photocurrent from a color component of a light input, ~~wherein~~ said color sensor circuit being configured to provide ~~outputs~~ a first output voltage ~~indicating~~ corresponding to an intensity of said color component occurring at a current ambient temperature;

a dark color sensor circuit configured to provide ~~for producing~~ a dark photocurrent proportional to said current ambient temperature and ~~outputting~~ output a second output voltage ~~indicating~~ corresponding to an offset voltage generated by said dark photocurrent at said ambient temperature; and

a differential amplifier circuit operably coupled to said color sensor circuit and to said dark color sensor circuit, said differential amplifier circuit being configured to receive ~~, for receiving~~ said first and second output voltages, ~~and outputting a final output canceling contributions of said offset voltage in said first voltage due to said dark photocurrent~~ remove, using said second output voltage, said dark color offset voltage from said first output voltage, and thereby provide a dark color offset voltage and ambient temperature compensated output signal to

a differential output thereof representative of said intensity of said color component.

2. (currently amended) The color ~~sensor~~ sensing circuit of Claim 1, wherein said color sensor circuit further comprises:

a transimpedance amplifier including an output configured to provide ~~for outputting~~ said first output voltage, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input;

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input; and

a photodetector configured to detect ~~for detecting~~ said photocurrent of said color component and comprising ~~including~~ a photodetector input coupled to ground and to said positive input, and a photodetector output coupled to said negative input.

3. (currently amended) The color ~~sensor~~ sensing circuit of Claim 1, wherein said dark color sensor circuit further comprises:

a transimpedance amplifier including an output configured to provide ~~for outputting~~ said second output voltage, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input;

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input; and

a photodetector configured to detect ~~for detecting~~ said dark photocurrent and comprising ~~including~~ a photodetector input coupled to ground and to said positive input, and a photodetector output coupled to said negative input.

4. (currently amended) The color ~~sensor~~ sensing circuit of Claim 1, wherein said differential amplifier circuit further comprises:

a difference amplifier configured to provide said compensated output signal to said differential output and further comprising ~~comprising an output for outputting said final output;~~ a positive input, and a negative input;

a feedback resistor having a resistor value with one end coupled to said negative input and another end coupled to said differential output;

a first resistor having said resistor value coupled in series with ~~an~~ a color sensor output configured to provide ~~outputting~~ said first output voltage and said negative input;

a second resistor having said resistor value coupled in series with a dark sensor output of said dark sensor circuit configured to provide ~~outputting~~ said second output voltage and said positive voltage; and

a third resistor having said resistor value coupled in series to said positive input and to ground.

5. (currently amended) The color ~~sensor~~ sensing circuit of Claim 4, wherein said resistor value approximates a resistance of a feedback resistor in said color sensor circuit.

6. (currently amended) The color ~~sensor~~ sensing circuit of Claim 1, wherein said color component comprises red.

7. (currently amended) The color ~~sensor~~ sensing circuit of Claim 1, wherein said color component comprises green.

8. (currently amended) The color ~~sensor~~ sensing circuit of Claim 1, wherein said color component comprises blue.

9. (currently amended) A dark color ambient temperature compensated color ~~sensor~~ sensing circuit, comprising:

a plurality of color sensor circuits, each color sensor circuit being configured to provide a light ~~producing~~ photocurrent from a ~~respective~~ color component of light input corresponding thereto, and ~~each~~ to output ~~outputting~~ a first output voltage corresponding to an ~~associated voltage indicating~~ intensity of said color component corresponding thereto that occurs at a current ambient temperature;

a dark color sensor circuit configured to provide ~~for producing~~ a dark photocurrent proportional to said current ambient temperature and ~~outputting~~ output ~~an~~ a second ~~offset~~ voltage corresponding to a offset voltage generated by said dark photocurrent at said ambient temperature, and;

at least one differential amplifier circuit operably coupled to said plurality of color sensor circuits and to said dark color sensor circuit and being configured to receive ~~for receiving~~ said first and second output voltages, remove, using said second output voltage, said dark color offset voltage from each of said first output voltages, and provide dark color offset voltage and ambient temperature compensated output signals corresponding to each of said color components to at least one differential output thereof, each of said output signals representing said intensity of said color component corresponding thereto.~~associated voltage and said offset voltage and outputting a final output canceling contributions of said offset voltage due to said dark photocurrent in said voltage of said respective color component.~~

10. (currently amended) The color ~~sensor~~ sensing circuit of Claim 9, ~~further comprising:~~

~~a plurality of differential amplifier circuits, including said at least one differential amplifier circuit, wherein each of said plurality of differential amplifier circuits corresponds to an associated color sensor circuit in said plurality of color sensor circuits, and is coupled to said associated color sensor circuit and to said dark color sensor circuit, and wherein each of said plurality of differential amplifier circuits comprises:~~

wherein said at least one differential amplifier circuit further comprises ~~a difference amplifier comprising an output for outputting said final output;~~ a positive input, and a negative input;

a feedback resistor having a resistor value with one end coupled to said negative input and another end coupled to said positive input, wherein said resistor value approximates a resistance of a feedback resistor included in at least one of said ~~associated~~ color sensor ~~circuit~~ circuits;

a first resistor having said resistor value coupled in series with said negative input and a ~~at least one output of said~~ color sensor circuits ~~output outputting said associated voltage of said associated color sensor circuit~~;

a second resistor having said resistor value coupled in series said positive voltage and with a dark sensor circuit output ~~of said dark color sensor circuit outputting said offset voltage~~; and

a third resistor coupled in series to said positive input and to ground.

11. (currently amended) The color ~~sensor~~ sensing circuit of Claim 9, wherein each of said plurality of color sensor circuits comprises:

a transimpedance amplifier including an output configured to provide ~~for outputting~~ said first output voltage~~associated voltage~~, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input;

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input; and

a photodetector configured to detect ~~for detecting~~ said photocurrent of said color component and comprising ~~including~~ a photodetector input coupled to ground and to said positive input, and a photodetector output coupled to said negative input.

12. (currently amended) The color ~~sensor~~ sensing circuit of Claim 9, wherein said dark color sensor circuit further comprises:

a transimpedance amplifier including an output configured to provide ~~for outputting~~ said second output ~~offset~~ voltage, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input;

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input; and

a photodetector configured to detect ~~for detecting~~ said dark photocurrent and comprising ~~including~~ a photodetector input coupled to ground and to said positive input, and a photodetector output coupled to said negative input.

13. (currently amended) The color ~~sensor~~ sensing circuit of Claim 9, wherein said color component comprises red.

14. (currently amended) The color ~~sensor~~ sensing circuit of Claim 9, wherein said color component comprises green.

15. (currently amended) The color ~~sensor~~ sensing circuit of Claim 9, wherein said color component comprises blue.

16. (currently amended) A method for sensing color, comprising:

measuring, at an ambient temperature, a first voltage associated with a first intensity of a first color component of a first light input;

measuring, at said ambient temperature, an offset voltage associated with a dark photocurrent ~~offset affecting said measurement of said first voltage~~; and

subtracting said offset voltage from said first voltage thereby to ~~cancel said dark current offset in said first voltage~~ provide a dark color offset voltage and ambient temperature compensated first output signal representative of said first intensity of said first color component ~~in order to obtain a final output voltage representing said intensity compensating for said dark current offset~~.

17. (currently amended) The method of Claim 16, further comprising:

matching a resistor value for resistors in a differential amplifier circuit, to a resistance of a feedback resistor in a color sensor circuit ~~used~~ configured to measure said first voltage, wherein said differential amplifier circuit is configured to receive ~~receives~~ said first voltage and said offset voltage and outputs said final voltage.

18. (currently amended) The method of claim 16, further comprising:

measuring, at said ambient temperature, ~~a plurality of~~ a second voltages associated with a second intensity of a second color component of a second light input~~intensities of respective color components of said light input~~; and

subtracting said offset voltage from said first voltage and said second voltage ~~each of said plurality of voltages~~thereby to provide dark color offset voltage and ambient temperature compensated first and second output signals representative of each of said first and second intensities of said first and second color components, respectively. ~~to cancel said dark current offset in order to obtain a plurality of final output voltages representing intensity of said respective color components that each compensate for said dark current offset~~.

19. (currently amended) The method ~~color sensor circuit~~ of Claim 16, wherein said first color component comprises red.

20. (currently amended) The method ~~color sensor circuit~~ of Claim 16, wherein said first color component comprises green.

21. (currently amended) The method ~~color sensor circuit~~ of Claim 16, wherein said first color component comprises blue.